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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,819	08/28/2001	Rene Monshouwer	NL000770	6675
24737	7590	12/01/2004	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			STOCK JR, GORDON J	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,819

Applicant(s)

MONSHOUWER ET AL.

Examiner

Gordon J Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/20/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20020418</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement filed on April 18, 2002 has been considered by the Examiner. However the two references: Patent Abstract of Japan/JP 02 069604 and "Novel ... Precision" by Moel et al. were not considered for they do not comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because no legible copies of the references were submitted.

Claim Objections

2. **Claim 1** is objected to for the following: "an interference patter" on line 14 should read --an interference pattern--. Correction is required.

3. **Claim 9** is objected to for the following: "the alignment-measuring method" of line 10 lacks antecedent basis. Correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1-6, 8-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The terms "substantially smaller" and "substantially equal" in **claims 1 and 9** and "substantially smaller" of **claim 5** are relative terms which render the claims indefinite. The term "substantially smaller" and "substantially equal" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of

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ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term 'substantially' renders the size of the substrate alignment mark's period and the interference pattern's period indefinite. **Claims 2-4, 6, 8, 10-11** are rejected for being dependent upon a rejected base claim.

7. **Claims 1 and 9** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between 'a substrate alignment mark with an alignment beam' and 'a substrate alignment mark having a periodic structure,' and 'the reference alignment mark' and 'a mask alignment mark.' In addition, the term "the substrate alignment mark" on line 14 of claim 1 and on line 23 of claim 9 is indefinite, for it is unclear as to what alignment mark it is referring to: 'a substrate alignment mark with an alignment beam' or 'a substrate alignment mark having a periodic structure,' **Claims 2-4, 6, and 8** are rejected for depending upon a rejected base claim.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. **Claims 1-4, 6, and 8** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1-7** of U.S. Patent Application **09/940,818 (Monshouwer et al.)**. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claims 1 and 6** and **claims 1, 5, and 6** of the other application are both methods of measuring alignment or type of alignment, overlay, utilizing the same substrate alignment mark, reference alignment mark, a substrate alignment mark with a specific period and a resist mark with a specific period and measuring/detecting an interference pattern generated by the substrate alignment mark and resist mark which is then imaged onto a reference alignment mark using on-axis principles and an optical filter to select diffraction orders of the radiation. **Claims 2** of both applications relate to the same marks with similar periods being used. **Claims 3** of both applications mention using gratings for the marks. **Claims 4** of both applications mention using latent marks. **Claim 8 and claim 7** of the other application both are methods of alignment involving off axis alignment.

Allowable Subject Matter

10. **Claims 1-4, 6, and 8** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and if the double patenting rejection is overcome.

Claims 5, 9-11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

As to **claim 1**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring alignment imaging the particular interference pattern on a mask alignment mark using an optical filter in combination with the rest of the limitations of **claims 1-4, and 8**.

As to **claim 5**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of aligning a substrate with respect to a mask imaging an interference pattern on a non-substrate reference alignment mark via an optical filter in combination with the rest of the limitations of **claims 5, 10, and 11**.

As to **claim 9**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of manufacturing devices imaging the particular interference pattern on a mask alignment mark via an optical filter, in combination with the rest of the limitations of **claim 9**.

Response to Arguments

11. Applicant's arguments, see Remarks, filed September 15, 2004, with respect to the **claim 9** under 35 U.S.C. 102(a) and 102(e); and **claims 1-6 and 8** under 35 U.S.C. 103(a) have been fully considered and are persuasive. In view of the persuasiveness and the amendment to the

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claims the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made. See 35 U.S.C. 112nd second paragraph and double patenting rejection above.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

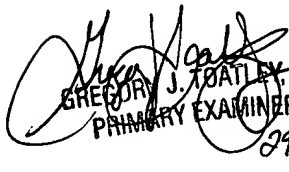
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gs

November 23, 2004


GREGORY J. TOATLEY, JR.
PRIMARY EXAMINER SPE 2877
29 Nov 04